

Equivalent Surface Area Dosage Conversion Factors

This table gives approximate factors for converting doses expressed in terms of mg/kg from one species to an equivalent surface area dose expressed as mg/kg in the other species tabulated. The assumptions and constants of the paper by Freireich EJ, et al, 1966 are used.

		TO				
		Mouse 20 g	Rat 150 g	Monkey 3 kg	Dog 8 kg	Man 60 kg
FROM	Mouse	1	1/2	1/4	1/6	1/12
	Rat	2	1	1/2	1/4	1/7
	Monkey	4	2	1	3/5	1/3
	Dog	6	4	1 2/3	1	1/2
	Man	12	7	3	2	1

Ex: Given a dose of 50 mg/kg in the mouse, what is the appropriate dose in the monkey assuming equivalency on the basis of mg/m²? $50 \text{ mg/kg} \times 1/4 = 13 \text{ mg/kg}$.

Representative Surface Area to Weight Ratios [km] for Various Species¹

Species	Body Weight [kg]	Surface Area [sq. m.]	km factor
Mouse	0.02	0.0066	3.0
Rat	0.15	0.025	5.9
Monkey	3.0	0.24	12
Dog	8.0	0.40	20
Human, Child	20	0.80	25
Human, Adult	60	1.6	37

¹ Freireich, EJ, et al. Quantitative comparison of toxicity of anticancer agents in mouse, rat, dog, monkey and man. *Cancer Chemother Rep.* 1966;50(4):219-244.

Ex: To express a mg/kg dose in any given species as the equivalent mg/sq.m. dose, multiply the dose by the appropriate km factor. In adult humans, 100 mg/kg is equivalent to $100 \text{ mg/kg} \times 37 \text{ kg/sq.m.} = 3700 \text{ mg/sq.m.}$

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